

WE CLAIM:

1. A substrate processing apparatus comprising:
an alignment system disposed at a position such that information regarding a pattern arrangement of a substrate is obtained;

a processing system disposed separately from the alignment system and used for processing a substrate;

a first substrate stage which is able to support a substrate and move in an xy plane, the xy plane being a plane parallel to a direction of an arrangement between the alignment system and the processing system and a z axis being an axis perpendicular to the xy plane;

a second substrate stage which is able to support a substrate and move in the xy plane; and

position measurement systems which measure the positions of the first and second substrate stages,

wherein at least three position measurement systems are arranged for the position measurement in the x direction and at least three position measurement systems are arranged for the position measurement in the y direction, at least one of the position measurement systems for the position measurement in the y direction being disposed at an opposite side of another one of the position measurement systems for the position measurement in the y direction.

2. An apparatus according to Claim 1, wherein a position measurement operation of a substrate in the alignment system, the substrate being supported by one of the first and second substrate stages, and a processing operation of a substrate in the processing system, the substrate being supported by the other one of the first and second substrate stages, are performed in parallel.

3. An apparatus according to Claim 1, wherein, every time the first and second substrate stages are aligned in the x direction, the order in which the first and second substrate stages are aligned is the same.

4. An apparatus according to Claim 1, wherein, when the first and second substrate stages move between the alignment system and the processing system, clockwise and counterclockwise rotations around the z axis are alternately performed.

5. An apparatus according to Claim 1, wherein a plurality of position measurement systems for the position measurement in the x direction is arranged at each side of the first and second substrate stages.

6. An apparatus according to Claim 1, further comprising two-dimensional driving means, which drive the first and second substrate stages, and comprise a surface motor.

7. An apparatus according to Claim 1, further comprising suction force suppliers, each of which supplies a suction force for retaining a substrate, connected to the first and second substrate stages at point-symmetric positions across the first and second substrate stages.

8. An apparatus according to Claim 1, wherein the apparatus serves as an exposure apparatus and further comprises a display, a network interface, and a computer for executing network software, wherein maintenance information of the exposure apparatus is communicated via a computer network.

9. An apparatus according to Claim 8, wherein the network software provides, on the display, a user interface for accessing a maintenance database, which is provided by a vendor or a user of the exposure apparatus and connected to a network external to a factory in which the exposure apparatus is installed, so that information is obtained from the maintenance database via the external network.

10. A device manufacturing method comprising the step of manufacturing a device by using a substrate processing apparatus, wherein the substrate processing apparatus includes:

an alignment system disposed at a position such that information regarding a pattern arrangement of a substrate is obtained;

a processing system disposed separately from the alignment system and used for processing a substrate;

a first substrate stage which is able to support a substrate and move in an xy plane, the xy plane being a plane parallel to a direction of an arrangement between the alignment system and the processing system and a z axis being an axis perpendicular to the xy plane;

a second substrate stage which is able to support a substrate and move in the xy plane; and

position measurement systems which measure the positions of the first and second substrate stages,

wherein at least three position measurement systems are arranged for the position measurement in the x direction and at least three position measurement systems are arranged for the position measurement in the y direction, at least one of the position measurement systems for the position measurement in the y direction being disposed at an opposite

side of another one of the position measurement systems for the position measurement in the y direction.

11. A semiconductor device manufacturing method comprising the steps of:

installing manufacturing apparatuses for performing various processes, which include an exposure apparatus, in a semiconductor manufacturing factory; and

manufacturing a semiconductor device in a plurality of processes by using the manufacturing apparatuses,

wherein the exposure apparatus includes:

an alignment system disposed at a position such that information regarding a pattern arrangement of a substrate is obtained;

a processing system disposed separately from the alignment system and used for processing a substrate;

a first substrate stage which is able to support a substrate and move in an xy plane, the xy plane being a plane parallel to a direction of an arrangement between the alignment system and the processing system and a z axis being an axis perpendicular to the xy plane;

a second substrate stage which is able to support a substrate and move in the xy plane; and

position measurement systems which measure the positions of the first and second substrate stages,

wherein at least three position measurement systems are arranged for the position measurement in the x direction and at least three position measurement systems are arranged for the position measurement in the y direction, at least one of the position measurement systems for the position measurement in the y direction being disposed at an opposite side of another one of the position measurement systems for the position measurement in the y direction.

12. A method according to Claim 11, further comprising the steps of:

connecting the manufacturing apparatuses by a local area network; and

communicating information regarding at least one of the manufacturing apparatuses between the local area network and a network external to the semiconductor manufacturing factory.

13. A method according to Claim 12, wherein maintenance information of the manufacturing apparatus is obtained by data communication via the external network by accessing a database provided by a vendor or a user of the exposure apparatus, or production control is performed by data communication with another semiconductor manufacturing factory via the external network.

14. A semiconductor manufacturing factory comprising:
manufacturing apparatuses for performing various
processes including an exposure apparatus;

a local area network which connects the manufacturing
apparatuses; and

a gateway which enables the local area network to
access a network external to the factory, information
regarding at least one of the manufacturing apparatuses
being communicated via the gateway,

wherein the exposure apparatus includes:

an alignment system disposed at a position such that
information regarding a pattern arrangement of a substrate
is obtained;

a processing system disposed separately from the
alignment system and used for processing a substrate;

a first substrate stage which is able to support a
substrate and move in an xy plane, the xy plane being a
plane parallel to a direction of an arrangement between the
alignment system and the processing system and a z axis
being an axis perpendicular to the xy plane;

a second substrate stage which is able to support a
substrate and move in the xy plane; and

position measurement systems which measure the
positions of the first and second substrate stages,

wherein at least three position measurement systems are arranged for the position measurement in the x direction and at least three position measurement systems are arranged for the position measurement in the y direction, at least one of the position measurement systems for the position measurement in the y direction being disposed at an opposite side of another one of the position measurement systems for the position measurement in the y direction.

15. A maintenance method for an exposure apparatus installed in a semiconductor manufacturing factory, the maintenance method comprising the steps of:

providing a maintenance database by a vendor or a user of the exposure apparatus, the maintenance database being connected to a network external to the semiconductor manufacturing factory;

allowing access from the semiconductor manufacturing factory to the maintenance database via the external network; and

transmitting maintenance information stored in the maintenance database to the semiconductor manufacturing factory via the external network,

wherein the exposure apparatus includes:

an alignment system disposed at a position such that information regarding a pattern arrangement of a substrate

is obtained;

a processing system disposed separately from the alignment system and used for processing a substrate;

a first substrate stage which is able to support a substrate and move in an xy plane, the xy plane being a plane parallel to a direction of an arrangement between the alignment system and the processing system and a z axis being an axis perpendicular to the xy plane;

a second substrate stage which is able to support a substrate and move in the xy plane; and

position measurement systems which measure the positions of the first and second substrate stages,

wherein at least three position measurement systems are arranged for the position measurement in the x direction and at least three position measurement systems are arranged for the position measurement in the y direction, at least one of the position measurement systems for the position measurement in the y direction being disposed at an opposite side of another one of the position measurement systems for the position measurement in the y direction.

16. A substrate processing apparatus comprising:

an alignment system disposed at a position such that information regarding a pattern arrangement of a substrate is obtained;

a processing system disposed separately from the alignment system and used for processing a substrate;

a first substrate stage which is able to support a substrate and move in an xy plane, the xy plane being a plane parallel to a direction of an arrangement between the alignment system and the processing system and a z axis being an axis perpendicular to the xy plane;

a second substrate stage which is able to support a substrate and move in the xy plane; and

position measurement systems which measure the positions of the first and second substrate stages in the x and y directions by radiating beams,

wherein, while the first and second substrate stages move between the alignment stage and the processing stage, the position measurement systems which radiate the beams are changed so that the beams are always radiated on the first and second substrate stages.

17. An apparatus according to Claim 16, wherein a position measurement operation of a substrate in the alignment system, the substrate being supported by one of the first and second substrate stages, and a processing operation of a substrate in the processing system, the substrate being supported by the other one of the first and second substrate stages, are performed in parallel.

18. An apparatus according to Claim 16, wherein, every time the first and second substrate stages are aligned in the x direction, the order in which the first and second substrate stages are aligned is the same.

19. An apparatus according to Claim 16, wherein, when the first and second substrate stages move between the alignment system and the processing system, clockwise and counterclockwise rotations around the z axis are alternately performed.

20. An apparatus according to Claim 16, wherein a plurality of position measurement systems for the position measurement in the x direction is arranged at each side of the first and second substrate stages.

21. An apparatus according to Claim 16, wherein a plurality of position measurement systems for the position measurement in the x direction is arranged at each side of the first and second substrate stages, and, in a plurality of reflection surfaces for reflecting the beams, reflection surfaces which face the position measurement systems for the position measurement in the x direction are long enough to protrude in the y direction.

22. An apparatus according to Claim 16, wherein at least one of a plurality of reflection surfaces for reflecting the beams is long enough to protrude in the y direction, and the position measurement systems are disposed only at the side facing the reflection surface protruding in the y direction.

23. An apparatus according to Claim 16, further comprising two-dimensional driving means, which drive the first and second substrate stages, and comprise a surface motor.

24. An apparatus according to Claim 16, further comprising suction force suppliers, each of which supplies a suction force for retaining a substrate, which are connected to the first and second substrate stages at point-symmetric positions across the first and second substrate stages.

25. An apparatus according to Claim 16, wherein the apparatus serves as an exposure apparatus and further comprises a display, a network interface, and a computer for executing network software, wherein maintenance information of the exposure apparatus is communicated via a computer network.

26. An apparatus according to Claim 25, wherein the network software provides, on the display, a user interface for accessing a maintenance database, which is provided by a vendor or a user of the exposure apparatus and connected to a network external to a factory in which the exposure apparatus is installed, so that information is obtained from the maintenance database via the external network.

27. A device manufacturing method comprising the step of manufacturing a device by using a substrate processing apparatus, wherein the substrate processing apparatus includes:

an alignment system disposed at a position such that information regarding a pattern arrangement of a substrate is obtained;

a processing system disposed separately from the alignment system and used for processing a substrate;

a first substrate stage which is able to support a substrate and move in an xy plane, the xy plane being a plane parallel to a direction of an arrangement between the alignment system and the processing system and a z axis being an axis perpendicular to the xy plane;

a second substrate stage which is able to support a substrate and move in the xy plane; and

position measurement systems which measure the positions of the first and second substrate stages in the x and y directions by radiating beams,

wherein, while the first and second substrate stages move between the alignment stage and the processing stage, the position measurement systems which radiate the beams are changed so that the beams are always radiated on the first and second substrate stages.

28. A semiconductor device manufacturing method comprising the steps of:

installing manufacturing apparatuses for performing various processes, which include an exposure apparatus, in a semiconductor manufacturing factory; and

manufacturing a semiconductor device in a plurality of processes by using the manufacturing apparatuses,

wherein the exposure apparatus includes:

an alignment system disposed at a position such that information regarding a pattern arrangement of a substrate is obtained;

a processing system disposed separately from the alignment system and used for processing a substrate;

a first substrate stage which is able to support a substrate and move in an xy plane, the xy plane being a plane parallel to a direction of an arrangement between the

alignment system and the processing system and a z axis being an axis perpendicular to the xy plane;

a second substrate stage which is able to support a substrate and move in the xy plane; and

position measurement systems which measure the positions of the first and second substrate stages in the x and y directions by radiating beams,

wherein, while the first and second substrate stages move between the alignment stage and the processing stage, the position measurement systems which radiate the beams are changed so that the beams are always radiated on the first and second substrate stages.

29. A method according to Claim 28, further comprising the steps of:

connecting the manufacturing apparatuses by a local area network; and

communicating information regarding at least one of the manufacturing apparatuses between the local area network and a network external to the semiconductor manufacturing factory.

30. A method according to Claim 29, wherein maintenance information of the manufacturing apparatus is obtained by data communication via the external network by

accessing a database provided by a vendor or a user of the exposure apparatus, or production control is performed by data communication with another semiconductor manufacturing factory via the external network.

31. A semiconductor manufacturing factory comprising:
manufacturing apparatuses for various processes
including an exposure apparatus;

a local area network which connects the manufacturing apparatuses; and

a gateway which enables the local area network to access a network external to the factory, information regarding at least one of the manufacturing apparatuses being communicated via the gateway,

wherein the exposure apparatus includes:

an alignment system disposed at a position such that information regarding a pattern arrangement of a substrate is obtained;

a processing system disposed separately from the alignment system and used for processing a substrate;

a first substrate stage which is able to support a substrate and move in an xy plane, the xy plane being a plane parallel to a direction of an arrangement between the alignment system and the processing system and a z axis being an axis perpendicular to the xy plane;

a second substrate stage which is able to support a substrate and move in the xy plane; and

position measurement systems which measure the positions of the first and second substrate stages in the x and y directions by radiating beams,

wherein, while the first and second substrate stages move between the alignment stage and the processing stage, the position measurement systems which radiate the beams are changed so that the beams are always radiated on the first and second substrate stages.

32. A maintenance method for an exposure apparatus installed in a semiconductor manufacturing factory, the maintenance method comprising the steps of:

providing a maintenance database by a vendor or a user of the exposure apparatus, the maintenance database being connected to a network external to the semiconductor manufacturing factory;

allowing access from the semiconductor manufacturing factory to the maintenance database via the external network; and

transmitting maintenance information stored in the maintenance database to the semiconductor manufacturing factory via the external network,

wherein the exposure apparatus includes:

an alignment system disposed at a position such that information regarding a pattern arrangement of a substrate is obtained;

a processing system disposed separately from the alignment system and used for processing a substrate;

a first substrate stage which is able to support a substrate and move in an xy plane, the xy plane being a plane parallel to a direction of an arrangement between the alignment system and the processing system and a z axis being an axis perpendicular to the xy plane;

a second substrate stage which is able to support a substrate and move in the xy plane; and

position measurement systems which measure the positions of the first and second substrate stages in the x and y directions by radiating beams,

wherein, while the first and second substrate stages move between the alignment stage and the processing stage, the position measurement systems which radiate the beams are changed so that the beams are always radiated on the first and second substrate stages.

33. A substrate processing apparatus comprising:

an alignment system disposed at a position such that information regarding a pattern arrangement of a substrate is obtained;

a processing system disposed separately from the alignment system and used for processing a substrate;

a first substrate stage which is able to support a substrate and move in an xy plane, the xy plane being a plane parallel to a direction of an arrangement between the alignment system and the processing system and a z axis being an axis perpendicular to the xy plane;

a second substrate stage which is able to support a substrate and move in the xy plane; and

position measurement systems which measure the positions of the first and second substrate stages,

wherein, every time the first and second substrate stages are aligned in the x direction while the first and second substrate stages move between an area of the alignment system and an area of the processing system, the order in which the first and second substrate stages are aligned is the same.

34. An apparatus according to Claim 33, wherein a position measurement operation of a substrate in the alignment system, the substrate being supported by one of the first and second substrate stages, and a processing operation of a substrate in the processing system, the substrate being supported by the other one of the first and second substrate stages, are performed in parallel.

35. An apparatus according to Claim 33, wherein, when the first and second substrate stages move between the alignment system and the processing system, clockwise and counterclockwise rotations around the z axis are alternately performed.

36. An apparatus according to Claim 33, wherein a plurality of position measurement systems for the position measurement in the x direction is arranged at each side of the first and second substrate stages.

37. An apparatus according to Claim 33, further comprising two-dimensional driving means, which drive the first and second substrate stages, and comprise a surface motor.

38. An apparatus according to Claim 33, further comprising suction force suppliers, each of which supplies a suction force for retaining a substrate, which are connected to the first and second substrate stages at point-symmetric positions across the first and second substrate stages.

39. An apparatus according to Claim 33, wherein the apparatus serves as an exposure apparatus and further

comprises a display, a network interface, and a computer for executing network software, wherein maintenance information of the exposure apparatus is communicated via a computer network.

40. An apparatus according to Claim 39, wherein the network software provides, on the display, a user interface for accessing a maintenance database, which is provided by a vendor or a user of the exposure apparatus and connected to a network external to a factory in which the exposure apparatus is installed, so that information is obtained from the maintenance database via the external network.

41. A device manufacturing method comprising the step of manufacturing a device using a substrate processing apparatus, wherein the substrate processing apparatus includes:

an alignment system disposed at a position such that information regarding a pattern arrangement of a substrate is obtained;

a processing system disposed separately from the alignment system and used for processing a substrate;

a first substrate stage which is able to support a substrate and move in an xy plane, the xy plane being a plane parallel to a direction of an arrangement between the

alignment system and the processing system and a z axis being an axis perpendicular to the xy plane;

a second substrate stage which is able to support a substrate and move in the xy plane; and

position measurement systems which measure the positions of the first and second substrate stages,

wherein, every time the first and second substrate stages are aligned in the x direction while the first and second substrate stages move between an area of the alignment system and an area of the processing system, the order in which the first and second substrate stages are aligned is the same.

42. A semiconductor device manufacturing method comprising the steps of:

installing manufacturing apparatuses for performing various processes, which include an exposure apparatus, in a semiconductor manufacturing factory; and

manufacturing a semiconductor device in a plurality of processes by using the manufacturing apparatuses,

wherein the exposure apparatus includes:

an alignment system disposed at a position such that information regarding a pattern arrangement of a substrate is obtained;

a processing system disposed separately from the

alignment system and used for processing a substrate;

a first substrate stage which is able to support a substrate and move in an xy plane, the xy plane being a plane parallel to a direction of an arrangement between the alignment system and the processing system and a z axis being an axis perpendicular to the xy plane;

a second substrate stage which is able to support a substrate and move in the xy plane; and

position measurement systems which measure the positions of the first and second substrate stages,

wherein, every time the first and second substrate stages are aligned in the x direction while the first and second substrate stages move between an area of the alignment system and an area of the processing system, the order in which the first and second substrate stages are aligned is the same.

43. A method according to Claim 42, further comprising the steps of:

connecting the manufacturing apparatuses by a local area network; and

communicating information regarding at least one of the manufacturing apparatuses between the local area network and a network external to the semiconductor manufacturing factory.

44. A method according to Claim 43, wherein maintenance information of the manufacturing apparatus is obtained by data communication via the external network by accessing a database provided by a vendor or a user of the exposure apparatus, or production control is performed by data communication with another semiconductor manufacturing factory via the external network.

45. A semiconductor manufacturing factory comprising:
manufacturing apparatuses for performing various processes, including an exposure apparatus;

a local area network which connects the manufacturing apparatuses; and

a gateway which enables the local area network to access a network external to the factory, information regarding at least one of the manufacturing apparatuses being communicated via the gateway,

wherein the exposure apparatus includes:

an alignment system disposed at a position such that information regarding a pattern arrangement of a substrate is obtained;

a processing system disposed separately from the alignment system and used for processing a substrate;

a first substrate stage which is able to support a

substrate and move in an xy plane, the xy plane being a plane parallel to a direction of an arrangement between the alignment system and the processing system and a z axis being an axis perpendicular to the xy plane;

a second substrate stage which is able to support a substrate and move in the xy plane; and

position measurement systems which measure the positions of the first and second substrate stages,

wherein, every time the first and second substrate stages are aligned in the x direction while the first and second substrate stages move between an area of the alignment system and an area of the processing system, the order in which the first and second substrate stages are aligned is the same.

46. A maintenance method for an exposure apparatus installed in a semiconductor manufacturing factory, the maintenance method comprising the steps of:

providing a maintenance database by a vendor or a user of the exposure apparatus, the maintenance database being connected to a network external to the semiconductor manufacturing factory;

allowing access from the semiconductor manufacturing factory to the maintenance database via the external network; and

transmitting maintenance information stored in the maintenance database to the semiconductor manufacturing factory via the external network,

wherein the exposure apparatus includes:

an alignment system disposed at a position such that information regarding a pattern arrangement of a substrate is obtained;

a processing system disposed separately from the alignment system and used for processing a substrate;

a first substrate stage which is able to support a substrate and move in an xy plane, the xy plane being a plane parallel to a direction of an arrangement between the alignment system and the processing system and a z axis being an axis perpendicular to the xy plane;

a second substrate stage which is able to support a substrate and move in the xy plane; and

position measurement systems which measure the positions of the first and second substrate stages,

wherein, every time the first and second substrate stages are aligned in the x direction while the first and second substrate stages move between an area of the alignment system and an area of the processing system, the order in which the first and second substrate stages are aligned is the same.

47. A substrate processing apparatus comprising:
an alignment system disposed at a position such that information regarding a pattern arrangement of a substrate is obtained;

a processing system disposed separately from the alignment system and used for processing a substrate;

a first substrate stage which is able to support a substrate and move in an xy plane, the xy plane being a plane parallel to a direction of an arrangement between the alignment system and the processing system and a z axis being an axis perpendicular to the xy plane;

a second substrate stage which is able to support a substrate and move in the xy plane; and

position measurement systems which measure the positions of the first and second substrate stages,

wherein, when the first and second substrate stages move between an area of the alignment system and an area of the processing system, clockwise and counterclockwise rotations around the z axis are alternately performed.

48. An apparatus according to Claim 47, wherein a position measurement operation of a substrate in the alignment system, the substrate being supported by one of the first and second substrate stages, and a processing operation of a substrate in the processing system, the

substrate being supported by the other one of the first and second substrate stages, are performed in parallel.

49. An apparatus according to Claim 47, wherein a plurality of position measurement systems for the position measurement in the x direction is arranged at each side of the first and second substrate stages.

50. An apparatus according to Claim 47, further comprising two-dimensional driving means, which drive the first and second substrate stages, and comprise a surface motor.

51. An apparatus according to Claim 47, further comprising suction force suppliers, each of which supplies a suction force for retaining a substrate, which are connected to the first and second substrate stages at point-symmetric positions across the first and second substrate stages.

52. An apparatus according to Claim 47, wherein the apparatus serves as an exposure apparatus and further comprises a display, a network interface, and a computer for executing network software, wherein maintenance information of the exposure apparatus is communicated via a computer network.

53. An apparatus according to 52, wherein the network software provides, on the display, a user interface for accessing a maintenance database, which is provided by a vendor or a user of the exposure apparatus and connected to a network external to a factory in which the exposure apparatus is installed, so that information is obtained from the maintenance database via the external network.

54. A device manufacturing method comprising the step of manufacturing a device by using a substrate processing apparatus, wherein the substrate processing apparatus includes:

an alignment system disposed at a position such that information regarding a pattern arrangement of a substrate is obtained;

a processing system disposed separately from the alignment system and used for processing a substrate;

a first substrate stage which is able to support a substrate and move in an xy plane, the xy plane being a plane parallel to a direction of an arrangement between the alignment system and the processing system and a z axis being an axis perpendicular to the xy plane;

a second substrate stage which is able to support a substrate and move in the xy plane; and

position measurement systems which measure the positions of the first and second substrate stages, wherein, when the first and second substrate stages move between an area of the alignment system and an area of the processing system, clockwise and counterclockwise rotations around the z axis are alternately performed.

55. A semiconductor device manufacturing method comprising the steps of:

installing manufacturing apparatuses for performing various processes, which include an exposure apparatus, in a semiconductor manufacturing factory; and

manufacturing a semiconductor device in a plurality of processes by using the manufacturing apparatuses,

wherein the exposure apparatus includes:

an alignment system disposed at a position such that information regarding a pattern arrangement of a substrate is obtained;

a processing system disposed separately from the alignment system and used for processing a substrate;

a first substrate stage which is able to support a substrate and move in an xy plane, the xy plane being a plane parallel to a direction of an arrangement between the alignment system and the processing system and a z axis being an axis perpendicular to the xy plane;

a second substrate stage which is able to support a substrate and move in the xy plane; and

position measurement systems which measure the positions of the first and second substrate stages,

wherein, when the first and second substrate stages move between an area of the alignment system and an area of the processing system, clockwise and counterclockwise rotations around the z axis are alternately performed.

56. A method according to Claim 55, further comprising the steps of:

connecting the manufacturing apparatuses by a local area network; and

communicating information regarding at least one of the manufacturing apparatuses between the local area network and a network external to the semiconductor manufacturing factory.

57. A method according to Claim 56, wherein maintenance information of the manufacturing apparatus is obtained by data communication via the external network by accessing a database provided by a vendor or a user of the exposure apparatus, or production control is performed by data communication with another semiconductor manufacturing factory via the external network.

58. A semiconductor manufacturing factory comprising:
manufacturing apparatuses for performing various
processes, and including an exposure apparatus;

a local area network which connects the manufacturing
apparatuses; and

a gateway which enables the local area network to
access a network external to the factory, information
regarding at least one of the manufacturing apparatuses
being communicated via the gateway,

wherein the exposure apparatus includes:

an alignment system disposed at a position such that
information regarding a pattern arrangement of a substrate
is obtained;

a processing system disposed separately from the
alignment system and used for processing a substrate;

a first substrate stage which is able to support a
substrate and move in an xy plane, the xy plane being a
plane parallel to a direction of an arrangement between the
alignment system and the processing system and a z axis
being an axis perpendicular to the xy plane;

a second substrate stage which is able to support a
substrate and move in the xy plane; and

position measurement systems which measure the
positions of the first and second substrate stages,

wherein, when the first and second substrate stages move between an area of the alignment system and an area of the processing system, clockwise and counterclockwise rotations around the z axis are alternately performed.

59. A maintenance method for an exposure apparatus installed in a semiconductor manufacturing factory, the maintenance method comprising the steps of:

providing a maintenance database by a vendor or a user of the exposure apparatus, the maintenance database being connected to a network external to the semiconductor manufacturing factory;

allowing access from the semiconductor manufacturing factory to the maintenance database via the external network; and

transmitting maintenance information stored in the maintenance database to the semiconductor manufacturing factory via the external network,

wherein the exposure apparatus includes:

an alignment system disposed at a position such that information regarding a pattern arrangement of a substrate is obtained;

a processing system disposed separately from the alignment system and used for processing a substrate;

a first substrate stage which is able to support a

substrate and move in an xy plane, the xy plane being a plane parallel to a direction of an arrangement between the alignment system and the processing system and a z axis being an axis perpendicular to the xy plane;

a second substrate stage which is able to support a substrate and move in the xy plane; and

position measurement systems which measure the positions of the first and second substrate stages,

wherein, when the first and second substrate stages move between an area of the alignment system and an area of the processing system, clockwise and counterclockwise rotations around the z axis are alternately performed.